

Amendments to the Abstract:

Please amend the abstract as follows:

A magnetic sensor device is disclosed for the detection or determination of detects or determines a magnetic field, such as for example, but not limited to, the presence of magnetic particles (15). In particular it relates to an integrated or on-chip magnetic sensor element (11) for the detection of magnetic nano-particles functioning as a label to biological molecules. The device of the present invention offers reduced cross-talk between the magnetic sensor element (11) and a magnetic field generator (12) by compensating capacitive and/or magnetic coupling for instance by using an electrostatic shield and /or modulation and demodulation techniques. The device may be used for magnetic detection of binding of biological molecules on a micro-array or biochip.

Fig. 21